REMARKS/ARGUMENTS

Claims 1-12 stand rejected under 35 U.S.C. §112, first paragraph, as based on a disclosure which is not enabling. The Examiner objects to the disclosure as failing to identify the composition of "MS-50", "MS-55", and "MS-80". The Examiner further objects to the claims as failing to teach the composition of compounds having functional groups falling within the scope of "f" as recited in claim 5, without undue experimentation. Finally, the Examiner objects to the recitation of the term "hydrophobic group" in claim 9 because of the failure to teach one of ordinary skill in the art to select those claimed groups without undue experimentation. The Examiner rejects claims 1-12 based on the failure of the disclosure to enable one skilled in the art to determine the composition of the aforementioned compounds without undue experimentation. Finally, claims 3-7, 9 and 10 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite because the terms "TES", "MS-50", "MS-55" and "MS-80" are not defined.

Claim 7 has been amended to recite a "hydrophobic silane binding agent", rather than a "hydrophobic saline binding agent." Claim 9 has been amended to render the recitation of this claim more consistent with the wording of claim 8 from which it depends. Claims 8 and 12 have also been amended to correct informalities. "TES" is defined in the specification on page 9, line 1, as tetraethoxy silane, and in line 2, as having the composition $Si(OC_2H_5)_4$. All reference to "MS-50", "MS-55" and "MS-80" has been deleted from the subject application by the present amendment as this nomenclature was erroneously included.

In the operation of self-emitting display devices, such as of the cathode ray tube (CRT) type,

optimum video image color purity is achieved by the emission of light characterized by three discrete spectra, i.e., red, green and blue, with no overlap between adjacent spectral components. By minimizing adjacent primary color overlap, color contrast is improved to provide a more visually pleasing video image. Improved color contrast is normally obtained by reducing the light transmission characteristic of a coating disposed on the display screen such as through the addition of organic dyes or the use of inorganic pigments in the display screen's outer surface coating. Because inorganic pigments have only limited solubility and are difficult to disperse in organic solvents, a more common approach involves the use of organic dyes in the display screen coating for increasing color video image contrast. These organic dyes are subject to bleaching out of the coating when the display screen, or faceplate, is wiped with a wet cloth containing either water or alcohol, eventually bleaching entirely out of the coating. This gives rise to undesirable water marks on the display screen surface. Silane coupling agents have been used in the past to prevent bleaching out of the dye from the display screen's surface coating. Unfortunately, the large amounts of silane coupling agent required to reduce washing out of the dye also tend to weaken the mechanical strength of the coating and change its light refractive index. In addition, large amounts of silane coupling agent lower the coating's electrical conductivity due to the relatively high content of non-conductive compounds, increasing the possibility of electrostatic shock.

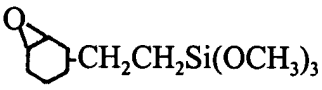
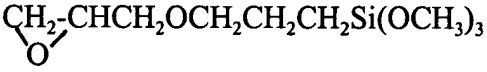
The claimed invention resolves these problems encountered in the prior art by providing an outer layer surface coating for a CRT display screen which includes a first silane coupling agent which reacts with the silica in the glass display screen to provide a high degree of adherence of the organic color dye to the display screen and a second silane coupling agent which is hydrophobic for

preventing moisture from permeating into the coating layer such as when wiped with a damp cloth or at high humidity. By using two silane coupling agents, each performing a different function, the desirable mechanical and electrical properties of the coating may be retained by using less amounts of silane coupling agent while providing the coating with increased water resistance to prevent washing out of the dye from the antireflective layer.

Silanes constitute a large class of silicone-based compounds. These compounds are in the form of straight-chain, saturated paraffin hydrocarbons such as of the alcane family. See the attached declaration of Chun-Min Hu and Exhibit A of this declaration. Many of the silane compounds are used as coupling agents for bonding organic materials to inorganic materials. The dyes used in the display screen's surface coating are identified throughout the specification of the subject application as organic dyes. Thus, the use of silane coupling agents to bond an organic material to an inorganic display screen comprised primarily of silica is well known to those skilled in the art of surface coating for display screens. Moreover, it is well known to modify these silane coupling agents by adding one or more specific functional groups via one or more organosilane coupling agents to specifically tailor its composition and functionality for enhancing desirable properties while minimizing any inherent disadvantages. See Exhibit B to the attached declaration of Chun-Min Hu. Thus, it is well within the skill of a surface chemist to selectively modify the composition and characteristics of a silane coupling agent to enhance desirable characteristics while minimizing any associated undesirable characteristics to provide improved performance.

Shin-Etsu Chemical Co., Ltd., is a large Japanese chemical company which manufactures silane coupling agents for sale around the world. Mr. Hu, in his declaration, has

identified four silane coupling agents which could be used as the "first silane binding agent" disclosed in the specification and recited in claim 1. These silane binding agents include:

A-1100	gamma-Aminopropyl-trimethoxysilane	$H_2NCH_2CH_2CH_2Si(OC_2H_5)_3$
A-1120	N-beta-(aminoethyl)-gamma-aminopropyl-trimethoxysilane	$H_2NCH_2CH_2NHCH_2CH_2CH_2Si(OCH_3)_3$
A-186	beta-(3,4-Epoxy-cyclohexyl)ethyl-trimethoxysilane	
A-187	gamma-Glycidoxy-propyltrimethoxysilane	

Mr. Hu has further identified the special function "f" group for each of these silane binding agents as follows:

A-1100	gamma-Aminopropyl
A-1120	N-beta-(aminoethyl)-gamma-aminopropyl
A-186	beta-(3,4-Epoxy-cyclohexyl)
A-187	gamma-Glycidoxy

Similarly, Mr. Hu in his declaration has identified the disclosed and claimed "second silane binding agent" which could be used in the present invention as 3,3,3-Trifluoropropyl trimethoxysilane which is designated as KBM-7103 in the functional silane chart in Exhibit B of his declaration. Mr. Hu has further identified the hydrophobic group of the second silane coupling agent as having the composition 3,3,3-Triflouropropyl. All of the products listed in Exhibit B of Mr. Hu's declaration are

commercially available and are well known silane coupling agents, the composition and characteristics of which are also well known to those skilled in the art of chemical coatings for video displays.

The Examiner has found that the prior art fails to teach the combination of an antireflective layer disposed on the outer surface of a CRT faceplate containing an organic dye, a first silane binding agent for binding to the organic dye and preventing the organic dye from diffusing out of the antireflective layer, and a second silane binding agent that provides increased water resistance for preventing the washing out of the dye. It is this unique combination of silane binding agents in the antireflective coating for the glass faceplate of a video display device which distinguishes the claimed invention from the prior art and defines Applicant's invention. Once one skilled in the art of silane coupling agents as used in coatings on a video display screen was provided with the concept of using a pair of silane binding agents to simultaneously perform two different functions which permits the use a reduced total amount of silane coupling agent and affords benefits as previously described, to arrive at the specific silane coupling agents which perform these specific functions would have easily been within the skill of a surface coating chemist familiar with the compositions, functions and characteristics of the well known coupling silane agents listed above.

With this amendment, all of the pending claims are believed to be in condition for allowance. Therefore, reconsideration and allowance of the pending claims is respectfully solicited.

Respectfully submitted,

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